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EXAMINER

ELAHEE, MD S

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

07/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/923,054

Applicant(s)

NIKAWA ET AL.

Examiner

Md S. Elahee

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4,6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/24/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is responsive to an amendment filed 05/24/2007. Claims 3, 4, 6 and 7 are pending. New drawings and are Specification approved and objection to drawings and Specification have been withdrawn.

Response to Arguments

2. Applicant's arguments filed on 05/24/2007 Remarks have been fully considered but they are not persuasive because of the following:

The applicant argues in pages 4-5 that **AAPA** do not optimize DC/DC converter efficiency. Examiner respectfully disagrees with this argument. It is because, the applicant didn't claim optimizing DC/DC converter efficiency **without lowering the efficiency from a predetermined maximum efficiency level** in the limiting display color number limiting mode. Instead, the applicant claims maintaining an efficiency of the DC/DC converter at an optimum level in the predetermined low-power consumption mode. The **AAPA** teaches this limitation (see page 3, lines 5-7). It is because, the operation efficiency of the **AAPA's** DC/DC converter obtained at certain power saving level [i.e., predetermined low-power consumption mode] is the optimum efficiency at that particular power level.

The applicant further argues in page 5 that Shimada et al., as cited and relied upon by the Examiner, also fail disclose or suggest determining a switching clock frequency of a DC/DC converter to maintain an efficiency of the DC/DC converter at an optimum level. However, this

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argument is **not** relevant because, the examiner did not rely upon **Shimada** to teach the limitation.

Thus, the rejection of the claims in view of **AAPA** and **Shimada** remain.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3, 4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant's admitted prior art** in view of **Shimada et al.** (US 6,014,132).

Regarding claims 3 and 4, with respect to fig.1-3, **Applicant's admitted prior art** teaches a method of reducing power consumption of a portable terminal equipped with a display unit to which power is supplied from a DC/DC converter, the method comprising the steps of:

monitoring the display unit to see whether the display unit is in a partial display mode [i.e., display color number limiting mode] or not (page 2, line 35-page3, line 2);

Applicant's admitted prior art further teaches to maintain an efficiency of the DC/DC converter at an optimum level in the predetermined low-power consumption mode (page 3, lines 5-7).

However, **Applicant's admitted prior art** does not teach the following limitation:

“determining one of the plurality of switching clock frequencies to maintain an efficiency of the DC/DC converter” and “switching the frequency to the determined switching clock frequency, and operating the DC/DC converter at this frequency”

Shimada teaches determining one of the plurality of switching clock frequencies to maintain an efficiency of the battery [i.e., DC/DC converter] and switching the frequency to the determined switching clock frequency, and operating the DC/DC converter at this frequency (col.5, lines 34-40). Having the cited art at the time the invention was made, it would have been

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obvious to one of ordinary skill in the art to incorporate the feature of determining one of the plurality of switching clock frequencies to maintain an efficiency of the DC/DC converter as well as switching the frequency to the determined switching clock frequency, and operating the DC/DC converter at this frequency to **Applicant's admitted prior art's** system as taught by **Jambhekar's** invention in order not to reduce power consumption by operating the device at a low clock frequency.

Regarding claims 6 and 7, **Applicant's admitted prior art** teaches that the display unit is an LCD display unit (fig.1, item 12).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Md S. Elahee whose telephone number is (571) 272-7536. The examiner can normally be reached on Mon to Fri from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ME
MD SHAFIUL ALAM ELAHEE
July 7, 2007

Shafiqul Alam
Primary Exam.
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